

REMARKS

I. Status of Claims

After the above amendments, claims 1, 3, 4, 6, 8, 9, and 17-25 are pending. Claims 1, 4, and 21 are independent.

II. Response to Notice of Incomplete Reply

Applicant thanks the Examiner for clarifying that the notice of incomplete reply was directed at independent claim 4, and not independent claim 8 as cited in the notice.

III. Rejections Over U.S. Patent No. 5,870,257 to Joe

In the Office Action, the Examiner rejected claims 1-10 under 35 U.S.C. § 102(b) over U.S. Patent No. 5,870,257 to Joe. The Examiner also rejected claims 2, 3, 5, 6, 8, and 9, under 35 U.S.C. § 103(a) over the Joe patent.

Applicant has carefully considered the rejections and has amended the claims to address the rejections. With respect to claim 1, claim 1 now recites, among other things, the limitation of *“an elastic body mounted on the circumferential surface of the shaft between the inner races of the upper and lower bearings, the elastic body directly contacting the inner races to generate a preload force at a predetermined angle with respect to the shaft.”* As shown in FIG. 2 of the pending application, the elastic body 160 contacts the inner races 141 and 151 to generate preload forces in the directions indicated by the arrows.

In contrast, the Joe patent does not disclose the recited limitation. As seen in Fig. 1 of the Joe patent, the Joe patent discloses a head drum assembly for a video cassette recorder. The head drum assembly of the Joe patent includes a fixed shaft 1, a flange 3, a rotary drum 4, a stationary drum 5, and upper and lower bearings 6, 6'. The rotary drum 4 is joined to the flange 3, and the flange 3 is disposed on the fixed shaft 1 by the upper and lower bearings 6, 6'.

In Fig. 1, the Joe patent shows a coil spring that surrounds the shaft and contacts the upper and lower bearings. The Joe patent does not discuss, or even mention, the coil spring. Accordingly, the only disclosure relating to the coil spring is the figures, and a careful examination of the figures shows that the coil spring only contacts the outer races of the upper and lower bearings.

Thus, the Joe patent does not disclose an elastic body that directly contacts the inner races. Furthermore, the Joe patent does not disclose what forces, if any, that the illustrated spring generates, nor does the Joe patent disclose the purpose or effect of the spring. Without a discussion of the spring, there is no teaching that the spring is of a sufficient size to generate any significant forces. One cannot assume, without any evidence, that the spring produces any preload force, let alone a preload force at a predetermined angle with respect to the shaft. Therefore, the Joe patent does not disclose the recited limitation of “the elastic body directly contacting the inner races to generate a preload force at a predetermined angle with respect to the shaft,” and claim 1 and its dependent claims are allowable for at least this reason.

Turning to claim 4, claim recites *“an elastic body for generating a preload force which is directed at a predetermined angle from the shaft on the inner races of the bearings.”* As shown in FIG. 2 of the pending application, the elastic body 160 contacts the inner races 141 and 151 to generate preload forces in the directions indicated by the arrows.

While the Joe patent shows a coil spring that surrounds the shaft and contacts the upper and lower bearings, the Joe patent does not discuss, or even mention, the coil spring. Thus, the Joe patent does not disclose what forces, if any, that the illustrated spring generates, nor does the Joe patent disclose the purpose or effect of the spring. Without a discussion of the spring, there is no teaching that the spring is of a sufficient size to generate any significant forces. One cannot assume, without any evidence, that the spring produces any preload force, let alone a preload force at a predetermined angle with respect to the shaft. Therefore, the Joe patent does not disclose the recited limitation of “an elastic body for generating a preload force which is directed at a predetermined angle from the shaft on the inner races of the bearings.” Thus, claim 4 and its dependent claims are allowable for at least this reason.

With respect to newly added independent claim 21, it recites *“means for generating a preload force which is directed at a predetermined angle from the shaft on the inner races of the bearings.”* As shown in FIG. 2 of the pending application, the exemplary embodiment of the means for generating a preload force includes an elastic body 160 that contacts the inner races 141 and 151 to generate preload forces in the directions indicated by the arrows.

As a means plus function limitation, the prior art must perform the identical function specified by this claim to anticipate this claim. *See, e.g., M.P.E.P. § 2183; Pennwalt Corp. v.*

Durand-Wayland, Inc., 833 F.2d 931, 4 U.S.P.Q.2d 1737 (Fed. Cir. 1987) (*en banc*). The Joe patent does not disclose generating a force on the inner races of the bearings at a predetermined angle from the shaft. Accordingly, this limitation cannot be met by the Joe patent, and, therefore, claim 21, and its dependent claims are allowable.

Finally, Applicant notes that the Examiner states that “it would have been obvious to one of ordinary skill in the art at the time the invention was made to configure the spring to contact and bias the inner races. The motivation is as follows: these are art recognized equivalents that operate in the same manner and produce the same results without any unexpected results.” There is no support for this assertion, and the Examiner appears to be taking official notice of a purportedly well-known fact. Pursuant to M.P.E.P. § 2144.04, Applicant requests that the Examiner provide documentary evidence regarding this assertion, including, if necessary, an affidavit or declaration setting forth specific factual statements and explanations to support the assertion.

IV. Rejections Under 35 U.S.C. § 112

In the Office Action, the Examiner rejected claims 4, 8, and 9, for various informalities. Applicants have amended the claims to, among other things, cure the noted informalities. Accordingly, the rejection under Section 112 is now moot, and Applicant respectfully requests withdrawal of the rejection.

V. Conclusion

In view of the above, it is believed that the above-identified application is in condition for allowance, and notice to that effect is respectfully requested. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

Respectfully submitted,



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